

Comments of the Massachusetts Department of Public Utilities on the 2nd Draft of Definition of BES (Project 2010-17) - Filed October 7, 2011

Please **DO NOT** use this form to submit comments on the 2nd draft of the Definition of the Bulk Electric System (Project 2010-17). Use the [electronic comment form](#) **only** to submit comments. Comments must be submitted by **October 10, 2011**.

If you have questions please contact Ed Dobrowolski at ed.dobrowolski@nerc.net or by telephone at 609-947-3673.

Background Information Definition of the BES (Project 2010-17)

The SDT responded to the comments received for the first posting of the definition for this project by clarifying the core definition, inclusions, and exclusions to meet the concerns of the industry. The SDT has also utilized a variety of other inputs including work that was done by regional entities such as WECC, NPCC, RFC, and FRCC in coming up with the present definition. Another input was FERC Orders No. 743 and 743a which provided several specific directives on clarifying the existing definition. It should be noted that the revised definition does not address functional entity registration or standards requirements applicability. Those are separate issues.

The core definition represents a true bright-line; but, it is clear that by itself, it does not cover all of the known situations and configurations that are needed for a complete definition. Therefore, the SDT developed several specific inclusions and exclusions that will be added to the core definition to complete it. At the present time, the SDT has drafted five specific inclusions and four specific exclusions.

Inclusions represent those items that are included as part of the Bulk Electric System (BES) where they would not have been included as part of the simple core definition. The reasons that the SDT has added these items are as follows:

- I1 – Since transformers have windings operating at different voltages, it was felt that clarification was required so as to more explicitly identify which transformers were to be included in the BES. The SDT believes that the present draft provides this needed clarification.
- I2 – This inclusion represents a merger of the original Inclusion I2 and the original Inclusion I3 concerning generation thresholds.
- I3 – Blackstart units are considered vital to the overall operation of the BES. Consequently, the SDT has included Blackstart Resources. However, due to industry comments, the SDT has deleted the inclusion of Cranking Paths.
- I4 – This item was added in order to accommodate the effects of variable generation on the BES. The intent of this configuration is to include variable generation (e.g., wind and solar resources) with an aggregate rating greater than 75 MVA and was considered different enough from what was proposed in Inclusion I2 as to warrant a separate inclusion statement in order to provide greater clarity in this area.
- I5 – This is a new inclusion brought about by industry comments to clarify the inclusion of Reactive Power devices.

In addition to inclusions, in order to complete the picture, specific exclusions also need to be considered. The SDT has currently drafted four specific exclusions:

- E1 – This item was added to address the basic issue of radial systems. Radial exclusion was part of the existing definition and was supported moving forward in all of the regional work as well as Order No. 743 (and Order No. 743a). The SDT has

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clarified this exclusion in response to industry comments by deleting the automatic interruption device.

- E2 – This item was added to address the situation of behind-the-meter generation. The wording is basically extracted from the ERO Statement of Compliance Registry Criteria.
- E3 – Local networks were added to the exclusion list after considerable discussions among the SDT and various registered entities that have configurations meeting these conditions. The SDT believes that any network that simply supports distribution should be excluded from the BES. The SDT has clarified the language for the exclusion and added a 300 kV upper limit.
- E4 – The SDT has added an exclusion for Reactive Power devices used solely by retail customers for their own use as a result of comments received.

Several commenters objected to simply carrying through the generation and voltage thresholds from the ERO Statement of Compliance Registry Criteria as part of the revised definition. However, no respondents provided technical justifications for changing these values. Furthermore, the scope of this project deals mainly with responding to FERC Orders 743 and 743a which clearly stated that the intent of the order was to maintain the status quo and to only address those urgent issues identified in the order. Hence, the tight schedule that was provided in the order. After consulting with the NERC Board of Trustees and the NERC Standards Committee, the SDT has decided to forgo any attempt at changing generation or voltage thresholds at this time. There simply isn't enough time or resources to do those topics justice with the mandated schedule. Therefore, the focus of the SDT efforts will be to address the directives in Orders 743 and 743a. However, this does not mean that the issues will be dropped. Both the NERC Board of Trustees and the NERC Standards Committee have endorsed the idea that the Project 2010-17 SDT take a phased approach to this project with a new Standards Authorization Request (SAR) to address generation thresholds as well as several other issues that have arisen from SDT deliberations. Issues such as what is necessary for the reliable operation of the BES, whether the BES needs to be a contiguous, possible interconnection difference, who is a user of the BES, and correlation of the definition of BES and the ERO Statement of Compliance Registry Criteria will be addressed with this new SAR. The proposed SAR has been posted for information purposes only concurrent with the second posting of this project. A formal comment period will follow.

In parallel with the definition project, another team has been set up to develop a change to the NERC Rules of Procedure (RoP) to allow for entities to technically justify excluding Elements from the BES that might otherwise be included according to the proposed definition. This same process would be used by Registered Entities to justify including Elements in the BES that might otherwise be excluded according to the proposed definition. This RoP team will develop the process for seeking an exemption from the definition but the DBESSDT will develop the criteria necessary for applying for an exemption through the standards development process. The DBESSDT developed exception criteria is posted separately but simultaneously to the second posting of the definition.

You do not have to answer all questions. Enter All Comments in Simple Text Format.

Insert a "check" mark in the appropriate boxes by double-clicking the gray areas.

The SDT has asked one specific question for each specific aspect of the definition.

1. The SDT has made clarifying changes to the core definition in response to industry comments. Do you agree with these changes? If you do not support these changes or you agree in general but feel that alternative language would be more appropriate, please provide specific suggestions in your comments.

Yes:

No: X

Comments: The Massachusetts Department of Public Utilities ("MA DPU") appreciates the opportunity to provide comments on the second draft definition of the Bulk Electric System ("BES"). Massachusetts is the largest state by population and load in New England. It comprises 46% of both the region's population and electricity consumption. Generating plants located in Massachusetts represent 42% of New England's capacity and our capitol city, Boston, is the largest load center in the region.

Some of the revisions since the last posting of the draft BES definition have improved the proposed language. However, the MA DPU has a number of concerns regarding both the substance of the definition and the process for developing this standard:

1) Phased Approach. While well-intentioned, separating the BES definition project into two separate phases is problematic from both a procedural and substantive perspective. While we recognize that the filing due date is rapidly approaching, the BES definition cannot be considered in a vacuum, divorced from the concerns raised by a number of parties in response to past postings of the BES definition. The issues NERC has identified for consideration during the proposed "Phase 2" are inseparable from the development of the BES definition (e.g., generation thresholds, technical justification for the 100 kV threshold) and should be squarely addressed before a definition is adopted and ratepayers incur costs related to compliance with mandates that may or may not be revised through the second phase of the project. The importance of considering concerns before adopting a definition is heightened by the proposed two-year implementation requirement. This short implementation period almost guarantees that entities will commit resources shortly after adoption of the definition to ensure compliance within the mandated period. In other words, ratepayers will bear costs related to compliance irrespective of any change resulting from the Phase 2 process or the exception process. Expediency, while understandable given the filing deadline, must be balanced against the risk that a multi-phased approach could lead to significant consumer costs without attendant meaningful reliability benefits.

2) Cost-Benefit Analysis. A cost impact analysis should be performed as part of developing any reliability standard. However, the development of the BES definition has failed to consider the cost impacts of the definition (and its inclusions and exclusions) and has not weighed these impacts against identified benefits that the definition would achieve. The MA DPU supported the May 21, 2011 comments from the New England States Committee on Electricity ("NESCOE") on the last posting of the BES definition. In these comments, NESCOE stated that "any new costs a revised definition imposes –

which fall ultimately on consumers – should provide meaningful reliability benefits.” A cost-benefit analysis should be integral to the development of a BES definition and, indeed, any reliability standard. This analysis should include a probabilistic risk assessment examining the likelihood of an event and the costs and risks resulting from such event, which should be weighed against the costs of complying with the proposed reliability measures.

3) Technical Justification. In addition to performing a cost-benefit analysis, a technical basis must be provided to justify a proposed reliability standard. However, the proposed BES definition does not provide a technical justification for the 100 kV threshold, the threshold for generation resources, or other elements of the definition. As stated above, while well-intentioned and understandable, deferring this technical justification to a later and separate phase of the project is a flawed and potentially costly approach. Providing a technical justification for a reliability standard is a core function of standards development and should be addressed at the forefront of the process rather than relegated to a separate phase largely undertaken after a standard is filed.

In Order 743, the Federal Energy Regulatory Commission (“FERC” or “the Commission”) directed NERC to revise the BES definition. *Revision to Electric Reliability Organization Definition of Bulk Electric System*, Order No. 743A, 134 FERC ¶ 61,210 (Mar. 17, 2011) at P 8, citing to *Revision to Electric Reliability Organization Definition of Bulk Electric System*, Order No. 743, 133 FERC ¶ 61,150 (2010). The Commission stated that one way NERC could address the technical and policy concerns FERC had identified would be to institute a “bright-line threshold that includes all facilities operated at or above 100 kV except defined radial facilities, and establish an exemption process and criteria for excluding facilities [NERC] determines are not necessary for operating the interconnected transmission network.” *Id.* at P 8. However, the Commission made clear in Order 743 that NERC may propose an alternative proposal and that the 100 kV threshold is an “initial line of demarcation” to be refined through exclusions and exemptions. *Id.* at PP 8, 40. Accordingly, unless and until NERC provides a technical justification for its approach, the Standard should use the 100 kV threshold concept in a way that is consistent with the Commission’s guidance. Specifically, the two criteria that bound the BES definition are (1) the statutory exclusion of facilities used in local distribution, and (2) the requirement that the facilities included be “necessary for reliable operation” of the interconnected transmission system. A definition that recognizes these limits, coupled with an efficient and transparent exception process, would appear to meet the Commission’s expectations. For these reasons, absent a technical justification for imposing a 100 kV threshold, the MA DPU supports the revised core definition offered by NESCOE in comments filed on this 2nd Draft:

“All Transmission Elements operated at 100 kV or higher and Real Power and Reactive Power resources connected at 100 kV or higher that are necessary for the reliable operation of the interconnected transmission network, including but not limited to the facilities listed below as Inclusions, and excluding (1) facilities that are used in the local distribution of electric energy, and (2) the facilities and systems listed below as Exclusions. Other Elements may be included or excluded on a case-by-case basis through the Rules of Procedure exception process.”

The definition of the BES is critical to NERC’s role as ERO and will have a significant impact on system reliability and cost to consumers. While FERC had concerns that the existing definitions for the bulk power system were under-inclusive, the proposed Standard, as drafted, risks erring in the opposite direction and appears inconsistent with the Commission’s guidance in this area.

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2. The SDT has revised the specific inclusions to the core definition in response to industry comments. Do you agree with Inclusion I1 (transformers)? If you do not support this change or you agree in general but feel that alternative language would be more appropriate, please provide specific suggestions in your comments.

Yes:

No: ☒

Comments: The MA DPU supports the revised Inclusion I1 language that treats Exclusions E1 and E3 as alternative exclusions, either of which may qualify as an exclusion. However, specificity is needed regarding what equipment is included in I1 (e.g., autotransformers, PARs, primary, secondary, tertiary windings).

3. The SDT has revised the specific inclusions to the core definition in response to industry comments. Do you agree with Inclusion I2 (generation) including the reference to the ERO Statement of Compliance Registry Criteria? If you do not support this change or you agree in general but feel that alternative language would be more appropriate, please provide specific suggestions in your comments.

Yes:

No: ☒

Comments: Failing to establish a known MVA rating at this stage is problematic. The BES definition cannot be considered in a vacuum, and adjusting or establishing thresholds such as MVA ratings will create regulatory uncertainty and may result in additional costs and unnecessary system upgrades.

Additionally, Inclusion I2 should remove the reference to the Statement of Compliance Registry Criteria. The definition should be the governing document regarding generation that is included in the BES.

4. The SDT has revised the specific inclusions to the core definition in response to industry comments. Do you agree with Inclusion I3 (blackstart)? If you do not support this change or you agree in general but feel that alternative language would be more appropriate, please provide specific suggestions in your comments.

Yes:

No: ☒

Comments: The inclusion should be revised to specify that only those blackstart units that are "material to" the BES are included in the definition.

5. The SDT has revised the specific inclusions to the core definition in response to industry comments. Do you agree with Inclusion I4 (dispersed power)? If you do not support this change or you agree in general but feel that alternative language would be more appropriate, please provide specific suggestions in your comments.

Yes:

No: ☒

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Comments: The aggregate 75 MVA of connected generation does not appear to be adequately supported by technical analysis and appears, on its face, as too low. Among our concerns is that such a low level will have a potential adverse impact on the development of renewable generation resources. In addition, the inclusion needs to be clarified in order that entities have clear guidance on what is meant by "common point of interconnection."

6. The SDT has added specific inclusions to the core definition in response to industry comments. Do you agree with Inclusion I5 (reactive resources)? If you do not support this change or you agree in general but feel that alternative language would be more appropriate, please provide specific suggestions in your comments.

Yes:

No: X

Comments: The inclusion of *all* devices that supply reactive power to the BES is unnecessary and will result in unjustified costs to the ratepayer. Static devices (fixed capacitors) should remain excluded from the BES as they are dispatched by operations personnel, and if one fixed capacitor bank fails, the operator can replace its impact by switching in another fixed bank. This represents routine operation of the system. On the other hand, dynamic devices may be important to maintaining voltage stability of the system. These installations typically are rated to supply or absorb 75 MVA or more to or from the BES. Therefore, the MA DPU suggests that dynamic reactive power devices rated at 75 MVA or more could be included in the BES. Further, revised inclusion I5 is a new inclusion that lacks definition (and appears to be redundant with the general BES definition). NERC should provide technical justification for the additional language under Inclusion I5.

7. The SDT has revised the specific exclusions to the core definition in response to industry comments. Do you agree with Exclusion E1 (radial system)? If you do not support this change or you agree in general but feel that alternative language would be more appropriate, please provide specific suggestions in your comments.

Yes: X

No:

Comments: The aggregate 75 MVA of connected generation appears too low and would benefit from additional technical justification.

8. The SDT has revised the specific exclusions to the core definition in response to industry comments. Do you agree with Exclusion E2 (behind-the-meter generation)? If you do not support this change or you agree in general but feel that alternative language would be more appropriate, please provide specific suggestions in your comments.

Yes: X

No:

Comments: While the MA DPU generally supports Exclusion E2, no information has been provided by NERC demonstrating that the 75 MVA rating is based on any sound technical analysis.

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9. The SDT has revised the specific exclusions to the core definition in response to industry comments. Do you agree with Exclusion E3 (local network)? If you do not support this change or you agree in general but feel that alternative language would be more appropriate, please provide specific suggestions in your comments.

Yes: X

No:

Comments: The MA DPU generally supports this exclusion but believes it is too narrow. As noted in the response to question 7, Exclusion E3 should likely allow a higher level of aggregate generation MVA on a Local Network. In addition, local networks should not necessarily be ineligible for Exclusion E3 simply because an amount of power may transfer out of the network at times. NERC's draft technical network exclusions document should be amended such that local networks would be permitted to qualify for network exclusions under E3 if power flowing out of the network is minimal and would not likely adversely impact the BES.

10. The SDT has added specific exclusions to the core definition in response to industry comments. Do you agree with Exclusion E4 (reactive resources)? If you do not support this change or you agree in general but feel that alternative language would be more appropriate, please provide specific suggestions in your comments.

Yes: X

No:

Comments: While we are generally supportive of this exclusion, the term "retail" needs to be clarified (i.e., are retail customers of all sizes intended to be excluded?).

11. Are there any other concerns with this definition that haven't been covered in previous questions and comments remembering that the exception criteria are posted separately for comment?

Yes:

No: X

Comments: